Answers for Comments on Draft Scope of Work from
3/19/02 Floodplain Task Force Meeting

1. Include examination of Charlotte-Mecklenburg in COE or additional study.

Answer: It was requested that the Corps of Engineers include this in their existing study. Also requested is for the Corp to obtain flood maps where available (e.g. Tulsa) that show the FEMA floodplain and an actual existing floodplain.

2. How do existing structures such as “old bridges” impact flooding?

Answer: Any obstruction (e.g. bridges) will impact flood heights. Some bridges will cause water to stack up behind the bridge due to being an obstruction and others may act as a venturi and increase the velocity of water under the bridge due to a constriction. All the bridges and their impacts are reflected in the flood elevations and profiles in the Flood Insurance Study.

At the April meeting will be a handout that shows the Flood Insurance Study profile segments from Salt Creek, Dead Man’s Run, and Beal Slough that show the profiles of the stream reaches being studied.

3. CRS - flood insurance savings. How does a community move from a Class 8 to a Class 1 community?

Answer: The CRS (Community Rating System) rating is based on a scale of 1 to 10 with one being the best and ten being the worst. Currently Lincoln is at a class 8 rating. The system is based on a points basis with 500 points equaling one class. Points are given for activities preformed in 18 different categories. They are: Elevation Certificates, Map information, Outreach Projects, Hazard Disclosure, Flood Protection Library, Flood Protection Assistance, Additional Flood Data, Open Space Preservation, Higher Regulatory Standards, Flood Data Maintenance, Storm Water Management, Floodplain Management Planning, Acquisition and Relocation, Retrofitting, Drainage System Maintenance, Flood Warning System, Levee Safety, and Dam Safety. Currently Lincoln has a total of 1093 points in eight different categories. We are currently working on receiving credit for 15 or 16 of the categories, which should lower us to around a class 5 or 6 rating. For each class lower on the scale a community receives a 5% reduction in insurance premiums through the National Flood Insurance Program.

4. Can the current discharge flow studies/maps be adjusted to reflect, even roughly, today’s realities?

Answer: The maps could be adjusted to reflect roughly today’s realities, but the process to have any validity would still require much time and effort.

Each change in assumption made regarding fill or hydrology (how much flow is in the stream) still requires further analysis to obtain a delineation on the extent of flooding. For example, in a hydrologic model each stream segment has different flow values. The resultant flow values are translated to a hydraulic model which consists of cross sections throughout the stream reaches. The result of this model is than evaluated to show the impacts and to explain the outcome of the assumption. Each assumption goes through a similar process which is time consuming and therefore not inexpensive. In the future, we may be able to develop the data infrastructure we need to utilize a GIS modeling approach to complete these kind of what-if scenarios fairly rapidly and efficiently. However, at this time we do not have such as system in place.

On the plus side the areas being studied are not impacted as greatly by the changes in urbanization as most places in Lincoln due to the following:

Salt Creek: The drainage area to Salt Creek below Lincoln is over 600 square miles, while the area of Lincoln is approximately 75 square miles. The size of the drainage area relative to the size of Lincoln, means the impact of the increased impervious area regarding the increase in flow is not as great as it is for a smaller urban watershed. However the fill in the floodfringe may have an impact as well as the change in the peak flow timing from the tributary channels.

Dead Man's Run: This reach was first mapped in a June 1997 revision of the floodplain maps. The hydrologic data for the basin was updated by the Corps of Engineers in 1989 (reference 17 in the Flood Insurance Study). At this time the basin was basically urbanized.

Beal Slough: The City did a stormwater master plan in Beal Slough, with the study completed in May 2000. The Corps of Engineers should be basing their study on the updated hydrology and hydraulics, which is current as of the 1997 - 1998 time frame. The Public Works and Utilities Department will check this assumption with the Corp on this matter (Note: Colleen Horihan is out until April 15, 2002).

5. Impact of Antelope Valley flood control project. Does it create a 'water dam' at Salt Creek - are there upstream impacts that we should be considering?

Answer: This information will be provided by Glenn Johnson during the April task force meeting.

6. Examine other tools/solution sets such as detention on tributary streams or other mitigation.

Answer: This information will be provided by Glenn Johnson during the April task force meeting.

7. A 50% loss of flood storage may not be an accurate assumption everywhere. Does there need to be a wider range of assumptions, or is there a way that they can more

closely match real-world occurrences?

Answer: Every situation is different, there is no typical percentage for loss of flood storage in an urban setting. It is felt that the 50% value offers the best compromise between showing complete fill that may not happen or a smaller loss of flood storage that would show little change and therefore offer no clue on what could happen with a larger loss in flood storage.

As stated in the answer to question 4 above, each assumption that is made requires a fairly extensive analysis to reach a valid conclusion.

Also the current Corps of Engineers Study includes actual modifications to hydrologic and hydraulic models, whereas the proposed additional studies are to look at economic impacts, benefits, and different concepts, which is more of a narrative study. To add new hydrologic and hydraulic modeling to the proposed additional study effort would significantly increase the cost.

8. Land available to develop within the floodplain needs to be considered. Would like to see a map showing developed vs. undeveloped areas within the floodplain.

Answer: This map will be provided during the April task force meeting.

9. Is the worst-case scenario really a 1-foot rise for each stream reach?

Answer: Typically for streams in urban settings (Dead Man's Run and Beal Slough) the worst-case scenario is more than one foot due to hydrologic changes from urbanization and filling in of the flood fringe. For Salt Creek it may be a different case, due to having a relative large watershed with an increased tolerance for urbanization of a relative smaller portion of the whole watershed. An increase of more than a foot could occur due a timing change of peak discharges from major tributaries, or more likely from extensive filling of flood fringe areas which typically causes an increase in flow.

10. Mitigation - not always appropriate. Need to consider whether it is appropriate or inappropriate in a range of situations (e.g., it may be inappropriate to impact/mitigate saline wetlands within floodplains).

Answer: To be included in the proposed additional study.

11. A "BMP" section needs to include consideration of conservation/restoration alternatives for vegetative cover within floodplain and its importance in mitigating flooding.

Answer: To be included in the proposed additional study.